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BEFORE THE DIVISION OF OIL, GAS AND MINING
DEPARTMENT OF NATURAL RESOURCES
STATE OF UTAH

In the Matter of the Permit Renewal for the Co-Op Mining Company's Bear Canyon Mine, Emery County, Utah.	)))))	TRANSCRIPT OF INFORMAL HEARING Cause No. Act/015/025

BE IT REMEMBERED that the above-entitled matter came on for informal hearing before the Division of Oil, Gas and Mining on Tuesday, February 5, 1991, at 6:30 p.m., at the Emery County Courthouse, Second Floor, 95 East Main, Castle Dale, Utah. The informal hearing conducted by Dianne R. Nielson, Director, Division of Oil Gas and Mining, and was reported by John F. Greenig, Registered Professional Reporter and Notary Public in and for the State of Utah.

Notice was given to the State of Utah and all parties interested in the above-entitled matter.

APPEARANCES

Division of Oil, Gas and Mining	Dianne R. Nielson, Director Pamela Grubaugh-Littig, Permit Supervisor Thomas A. Mitchell, Assistant Attorney General Thomas Munson, Reclamation Hydrologist Vicky Bailey, Secretary

P R O C E E D I N G S

MS. NIELSON: I realize there are still a few people coming in, but I would like to get this started. I'm Dianne Nielson. I'm Director of the State Division of Oil, Gas and Mining for the State of Utah. The hearing this evening is an informal hearing -- an informal Division hearing. And it's being conducted with regard to the matter of the renewal of the coal mining permit for the Bear Canyon Mine in Emery County.

As part of the hearing tonight, the proceedings will be reported. And I'll provide information in just a minute as to how you might obtain information regarding the hearing.

For the record, I'm going to read in the Notice that was published on this hearing. "In the matter of the permit renewal for the Co-Op Mining Company's Bear Canyon Mine, Emery County, Utah; Notice of Informal Division Hearing. The Cause Number: ACT/015/025. The Notice is hereby given and found to be sufficient that the Division of Oil, Gas and Mining will conduct an informal hearing on Tuesday, February 5, 1991, commencing at 6:30 p.m. at the Emery County Courthouse, Second Floor, 95 East Main, Castle Dale, Utah. "The informal hearing will be conducted in accordance with Utah Code Annotated, Section

40-10-13 (1953 as amended) and Utah Administrative Code Rules R614-300-122 and 123 (1990).

"The permittee, Co-Op Mining Company, is currently operating the Bear Canyon Mine, an underground coal mine in Emery County, Utah. Permittee has applied for renewal of the permit and also revision of the permit to include additional land for mining. Objections including, but not limited to, issues of water rights and impact of mining on the quality and quantity of Big Bear Canyon Spring, Birch Springs, and related surface and subsurface hydrology have been raised during the public comment period."

This hearing provides an opportunity for the entities that have raised objections during that public comment period to state their case, and it also provides an opportunity, as time is available, for other individuals hearing this evening to make comments.

The three objectors at this -- to the Permit are Castle Valley Special Service District in Castle Dale, Utah; North Emery Water Users Association in Elmo, Utah; and Huntington-Cleveland Irrigation Company in Huntington, Utah.

As I indicated earlier, the proceedings will be transcribed this evening. Mr. John F. Greenig is going to act as the court reporter. If you are interested in a transcription of the hearing, they are available from

Mr. Greenig through the Carbon County Court Complex in Price, Utah. There will also be a copy of the transcript available in the public records of the Division of Oil, Gas and Mining in Salt Lake City.

As a basis for the review and decision that the Division will make on this matter, the record will include all public records of the Division of Oil, Gas and Mining that now exist and are available for the public in Salt Lake, including documents and reviews conducted by the Division staff as part of the reviews for Permit renewal and revision of the Permit.

The objections that have been filed, and the response to the public comment period by the objectors will be considered, and all information presented this evening, as part of the informal hearing.

I would stress that this is an informal hearing. There will not be sworn testimony. The purpose of the record is to ensure that we have a complete and accurate notation of information that's presented tonight.

On the basis of the comments tonight and the foregoing information I mentioned, the Division will consider the objections that are raised with respect to the issuance of the Permit and status of the revisions that have been applied for.

At this time I would like to provide an opportunity

for introduction. Tonight representing the Division will be Pamela Grubaugh-Littig, who is the Permit Supervision responsible for the Bear Canyon Permit; Tom A. Mitchell, who is an Assistant Attorney General for the State of Utah and representing the Division of Oil, Gas and Mining; Tom Munson, who is a hydrologist with the Division and knowledgeable in terms of the Bear Canyon Permit; Vicky Bailey, who is in the back of the room, is responsible for the sign-in's tonight.

And I would encourage you, if you have not signed in, to please do so this evening and particularly if you are not with one of the objectors and you wish to make additional comments this evening.

Is there someone here representing Castle Valley Water Users' Association?

MR. LEAMASTER: (Indicating)

MS. NIELSON: Would you stand and identify yourself, please, for the record?

MR. LEAMASTER: I'm Darrel Leamaster. I'm District Manager of the District.

MS. NIELSON: All right. For North Emery Water Users' Association?

MR. COPINGA: Menco Copinga, the president of the company.

MS. NIELSON: Okay.

MR. APPEL: And I'm Jeffrey Appel, representing this company.

MS. NIELSON: And for Huntington-Cleveland Irrigation Company?

MS. WILSON: I'm -- Dale Wilson was not able to be here tonight, so I'm representing the company for him.

MS. NIELSON: All right. Co-Op Mining Company?

MR. OWEN: Wendell Owen, Co-Op Mining.

MR. KINGSTON: Carl Kingston. I represent Co-Op Mining Company.

MS NIELSON: Thank you. As we go forward and present information and you ask your questions, in order to make sure that we can accurately hear them and record them, I've asked you to come forward and use the microphone here on the podium. According to the sheet I have, there are -- let's see -- Scott Johansen will be representing Castle Valley?

MR. JOHANSEN: Huntington City.

MS. NIELSON: Huntington City. Okay.

MR. MANGUM: I'm a consultant for Co-Op Mining.

MS. NIELSON: Okay. Mr. Stoddard, Co-Op Mining also?

MR. STODDARD: Yes.

MS. NIELSON: Okay. At this point, except for those names that I've mentioned and the individuals who

have introduced themselves, I'm not aware that any other party wishes to make comment.

I would suggest the procedure --

MR. MANGUM: (Indicating)

MS. NIELSON: Excuse me.

MR. MANGUM: Dianne, as part of the comments I would make, we're also going to have Bryce Montgomery, consulting geologist.

MS. NIELSON: Thank you. And I appreciate that. As part of the procedure, I guess I'd suggest that we allow the three objectors to go first and present their information; provide an opportunity for Co-Op Mining to do the same. And then I would like to open the session to questions of all of those parties. And then if time allows and there are other individuals who want to make additional comment, we would take them after -- after those presentations and questions.

I'm not certain -- Mr. Leamaster, do you want to go first, or --

MR. LEAMASTER: (Indicating affirmatively.)

MS. NIELSON: Okay. And if you would like to introduce anyone else also, you can do that -- that will be presenting comments on behalf of --

MR. LEAMASTER: Can I state my name?

MS. NIELSON: Please do.

MR. LEAMASTER: My name is Darrel Leamaster. I'm a resident of Huntington, Utah. I'm a registered professional civil engineer in the State of Utah. I'm employed as the District Manager for the Castle Valley Special Service District in Castle Dale.

I would like to acquaint you for just a moment with the Castle Valley Special Service District so that you'll be able to recognize our relationship to the Spring and to Huntington City and Cleveland and Elmo. Our District is regionalized or consolidated type district that handles water -- culinary water, pressurized irrigation water, sewer and roads for seven communities in the western half of Emery County. We provide water services for the towns of Huntington, Cleveland and Elmo. We basically have intergovernmental agreements with those communities that allow us to do the operation and maintenance on their systems. So, that is the way that we're tied in with Huntington, Cleveland and Elmo. We actually operate and maintain the systems for them under their guidance and direction.

I would like to mention that we are working jointly with the North Emery Water Users in regards to this hearing. We have met and feel that we have common concerns and common interests. And we are working together with them. We have together hired a consultant, a geologist,

who later will be addressing us, and his name is Bryce Montgomery.

The way that we would like to proceed tonight, I would like to talk for a little while. Then following my remarks, I would like to have Menco Copinga speak; and then Bryce Montgomery; and then Scott Johansen, who is an attorney with us in Huntington City; and then Jeff Appel, who is an attorney for North Emery Water Users.

MS. NIELSON: Mr. Leamaster, could I also request that you and the speakers that follow, to the extent that you're addressing specific objections in the letter that you filed with us, could you identify those so that we can follow along with the testimony?

MR. LEAMASTER: I'll try. I really wasn't prepared to handle it that way, but I'll attempt to do that.

MS. NIELSON: Okay.

MR. LEAMASTER: To begin with, I would like to speak quite bluntly and to the point about why we raised objections and about why we requested this hearing.

First of all, let me say that our District and North Emery Water Users has, as our goal, the goal of providing safe drinking water in abundant supply of good quality and taste to all of our customers. And we regard that as no light matter. We're talking about four or five thousand people who depend upon us for their drinking water.

And let me suggest that there's no product that comes into our home that is more closely related to our health and our well-being than our drinking water. We not only drink it, but bathe with it; we brush our teeth with it; we wash our dishes, we cook our food with it. We're in very close contact with it in everything that we do in our homes. So anything that happens to that drinking water source to contaminate it or to ruin its quality, is really of significant impact upon our customers. And we really stress that, and we pay a lot of attention to it.

There are some tremendous liabilities that are placed upon us as water purveyors in providing a safe drinking water supply. Those liabilities come upon us through federal and state regulations and through common life. We have to provide safe drinking water.

We would like to stress that those same liabilities also fall upon the Co-Op Mine; that they, too, do not contaminate our water supply and cause harm to the public health and to our customers. We're concerned that in the work that they've done, they have not placed adequate importance on that safety impact.

Now, in a minute, I'm going to talk about -- a little bit about how our systems work. But we are very vulnerable to contamination to those springs. The water from those springs is never exposed. It comes out of the

mountain into our pipelines and then is delivered into our system. There is no way that we can effectively monitor day-in and day-out exactly what those springs are doing.

We do monitor, as required by the State Health Department, all of the inorganic chemicals, the coliform tests and so forth that are required. Those tests are done, as far as coliform, on a monthly basis and the other things on a yearly or three-year basis. It doesn't assure us that we will always catch contamination that is coming into the system, and we are very vulnerable to that.

And so we are extremely concerned about anything that the Co-Op Mine does that might effect those springs. We believe that in the mine application, particularly in Chapter 7 that deals with hydrology, that there are many things that were not adequately addressed, and there are some conflicting statements in there that leaves us with a lot of questions as to the results. They talk in some places about water going from the stumps into cracks and fractures that will end up in our springs. And yet in other places in that same Chapter, they say they will not do anything at all to effect our springs.

Throughout that Chapter, they have not adequately addressed what will happen should they interfere with

either the quantity or the quality of that spring flow. We believe that you should require them to go back and to rework that Chapter and more adequately address those concerns. We don't think what is there now is adequate.

We believe that in some respects the Co-Op Mine has already interfered with both our Big Bear Spring and with the Birch Spring. And we did refer to that in our letter requesting this hearing. We feel that in our case, with the Big Bear Spring, that we have suffered decline in flow. And the most recent inorganic chemical tests that we have taken have shown a sharp rise in the sulphate content in the dissolved solid's content which we think they're also attributed to actions that they are taking in the mine.

We are concerned that the past ground water monitoring that they have done has been inadequate. They have not done those things that they were to do in the first granting of their application. We have never been contacted about them sampling from our spring sources; of getting permission to get into those. They are padlocked and closed, and we don't know of any time that they have been into our springs to sample them. We have never been the recipients of any of the information of their sampling and monitoring tests. They only information that we have ever seen is that that was published in the

application report. We feel that we should be directly involved in receiving that information back on a timely basis so that we can see what's going on.

We feel very strongly about the monitoring requirements, and we feel that until we can have been assurance that they will monitor the way that they talk about in the application and the way that they're required to by the regulations, that you should deny the Permit and prevent them from proceeding until we have assurance that that monitoring will be done.

In the report in the--I mean Chapter 7 in Hydrology -- in several places they state that they will not have any effect on our springs. We disagree quite strongly with that statement. We do like to raise the question of what they would do if, in fact, they do interfere either with quality or quantity of the spring. What assurance do we have that that water will be replaced; that we can have a safe supply to provide to our customers? And what assurance do we have, as far as financially, that they will be able to meet those demands and provide that source of water? We could point out that this area is very poor, from a standpoint of quantity of water for other sources that they can obtain and use to put into our system. Between us and North Emery, we have used up about all the available sources that are in the area. So

if a source is lost, it's going to be a difficult problem to replace it. And we would like to have them address how that will be done, if they do effect it.

I would like to now acquaint you more with our water system and how we provide water in these communities. I have some handouts here; probably not enough for everyone, but at least enough for you (indicating). I have on the screen a partial slide of the top sheet that you have there. This is a general overlay of the area. Notice in the middle on the right side, the darkened area is the community of Elmo. Down from it and farther to the left is the community of Cleveland, and then the larger area of Huntington.

MS. NIELSON: Mr. Leamaster, excuse me. Could we -- just for purposes of the record, maybe number these 1, 2, 3, 4 as we go along?

MR. LEAMASTER: That will be fine.

MS. NIELSON: And we'll refer to this one as Exhibit 1?

MR. LEAMASTER: That will be fine.

MS. NIELSON: Okay.

MR. LEAMASTER: I would have done that, but I didn't really know if that's what you wanted.

MS. NIELSON: That's fine. We'll just handle it that way.

MR. LEAMASTER: These three communities are all served on a consolidated or common system. They were put together about, what, four or five years ago. Before that Huntington alone was served by water out of Bear Canyon Spring. At this time all three communities are served by the water from that spring.

Bryce, would you slide that over now so we can see the rest of it?

MR. MONTGOMERY: (Indicating)

MR. LEAMASTER: That's upside down.

MR. MONTGOMERY: (Indicating)

MR. LEAMASTER: I might also point out that those areas outside those communities that are not within the boundaries of the communities are served by North Emery Water Users. We have basically parallel systems that come down Huntington Canyon.

Bryce, can you slide that a little bit more? I would like to see those other two springs on there. Will it come down towards me a little more?

MR. MONTGOMERY: (Indicating)

MR. MUNSON: Could we have somebody hit some more lights there in the back?

SPECTATOR: (Indicating)

MR. LEAMASTER: Oh, that's better.

MS. NIELSON: Can you see okay?

MR. LEAMASTER: Yes, that's fine.

MS. NIELSON: Okay.

MR. LEAMASTER: On the upper part you will see a reference to Tie Fork Canyon Spring. That spring is located about fourteen-and-a-half miles away from Huntington. And we are piped from that point down to the State highway, which is near the point where you see the sign that says Little Bear Spring. We are then piped from that Little Bear Spring paralleling the State highway, which is Highway 31, down through the canyon. You'll see about in the middle the Bear Canyon Spring. That is piped from the spring down again to the highway, where it joins in with the transmission line from those other two springs. The line then continues down the canyon past the Utah Power & Light generating plant down through the area where you see the water treatment plant location. At that point we have a million gallon storage reservoir. The water is then piped from there in two separate lines: one directly to Huntington and the other directly to Cleveland and to Elmo. Those three springs make up the bulk of our water supply.

That water treatment plant has not been used for about eight years, and it has some problems with its use that's probably not pertinent to this hearing. But let us just say that it is a single path system. By that we

mean it has one percolator, one filter, one flash mixer. Everything is single. The Health Department has rated that plant based upon our spring. Because it is a single path plant, if anything breaks down, we have to rely on the spring. And so any expansion of that plant would have to require essentially doubling the plant size, which would be extremely costly.

May I have the next slide now, Bryce, please?

MR. MONTGOMERY: (Indicating)

MS. NIELSON: And we'll call this Exhibit 2.

MR. LEAMASTER: Okay. This is a fairly simple slide. All I've done is indicated here the number of water connections that we serve in Huntington and in Cleveland and Elmo, and the population -- the approximate population that we're serving. We have about a thousand and fifty-one connections and approximately three thousand people who are being served by our system. We expect shortly to receive a new census number, so we'll have a better handle on those populations. But those are our best estimates.

Again, let me stress the importance that we put on providing safe drinking water to those three thousand people. I live there. My wife and my children live there. My close friends and my family are all there. And we are really concerned about providing safe drinking water to

these three thousand people.

Would you go on to the next one now, please, Bryce?

MR. MONTGOMERY: (Indicating)

MS. NIELSON: This will be Exhibit 3.

MR. LEAMASTER: Yes. This will be Exhibit 3. This exhibit shows the flows that we have reported from the Big Bear Spring since 1983. Now, we do have additional flow data that is very good, but to the year 1980. Prior to the year 1980, we have only sketchy information. We installed meters in about 1980 and read those meters on the 15th of the month and the 31st of the month. And we have consistently done that since 1980. So we have very excellent flow data from that point forward.

I've only indicated from 1983 forward here, because in late 1982 the Tie Fork Springs were added into the system. You'll notice the second column there is the total spring flow from all of our springs. And the last column is the percentage of the total flow that is coming from Big Bear.

Now, there are a couple of significant things that I would like to point out. As you look down the column of the flow from Big Bear Springs, '83, '84, '85 and '86 were all quite high. And the flow has dropped in '87, '88, '89 and in '90. Now, in those four years we have experienced a drought in this area, and our precipitation

has been below normal. That's complicated the problem of trying to determine whether their operation has affected our spring flow in the past. We unfortunately don't have any data from 1977, which was the last year of severe drought in the area.

If you'll look over into the last column on the percentage of flow, you'll notice in those first few years Big Bear was providing approximately 33 percent or a third of our total flow. Beginning in 1987, that percentage has begun to drop. And it dropped down to a point now where less than a fourth of our flow is coming from Big Bear Spring. Now, all through these springs are fairly closely -- fairly close as far as distance between them. And we don't feel that the recharge areas are that much different. So what I'm suggesting here is something has happened to us beginning in 1987 to affect the flow out of Big Bear Spring; because its percentage has dropped in relationship to the flow of our other spring. I'll refer to that again on another exhibit.

Let's have the next one, Bryce.

MR. MONTGOMERY: (Indicating)

MR. LEAMASTER: Now, in your pack you will have two exhibits that I'm not going to put on the board. One of them is the precipitation, and the other is the April 1 snowfall accumulations.

MS. NIELSON: Do you want those both considered, though?

MR. LEAMASTER: Let's number those and consider them as exhibits.

MS. NIELSON: Okay. We'll call those Exhibits 4 and 5.

MR. LEAMASTER: Okay. I would mention that the information from these comes from three of the sites that are monitored by the Soil Conservation Service. They're the three that are closest to our spring: the Red Pine Ridge, the Mammoth Cottonwood -- and those two are Snow Tell sites -- They started snow tell automatic readouts in 1982. Before that they were manually read. And then the third site is at the Stewart Ranger Station, which is manually read. The numbers on the first one are the total yearly precipitation figures. And on the Exhibit 5 are the April 1 snow/water equivalent at those stations.

Now, the next exhibit, which I guess is 6, if I'm right --

MS. NIELSON: That's correct.

MR. LEAMASTER: (Continuing) -- is on the board. This is a chart that we've plotted up comparing the yearly precipitation to the spring flow. And, unfortunately, you can't see the other column -- the other side of this right now. The two are not related, as far

as the lines across. We plotted with the dotted line the precipitation and with the solid line the flow from our springs. What we're looking for here is a correlation between the precipitation and the spring flow. We feel like we have a good correlation until we get over to the year starting in about 1987 and '88, where the precipitation levels off and goes basically straight across. But you'll notice the shape of our flow curve continues to drop straight off and has continued to drop until just the last few weeks when it has come back up slightly.

We believe there is some significance in that break. And again, it's pointing to around 1987 and 1988. And we feel that something has happened to change those flow patterns out of the spring.

Now, Bryce, if you could put on the next one?

MR. MONTGOMERY: (Indicating)

MR. LEAMASTER: This curve is very similar, except rather than the total yearly precipitation figures, this is the April 1 snow/water equivalent at those stations. And again, as you look at the curve, we have a good correlation with the snow/water equivalent and the spring flows until we get over to the area of 1987 and '88, where the spring flows continue to drop and the precipitation levels off. We feel that we have had an impact from the mining operation during that point in time; and

that our curve should have leveled off more in line with the snow/water equivalent and the precipitation curve.

That's all the slides I have. If I could have the lights back on, please?

MS. NIELSON: And we'll refer to that last graph as Exhibit 7.

MR. LEAMASTER: I'm just about ready to wind up.

(Whereupon, an off-the-record discussion was had.)

MR. LEAMASTER: Just in summary, let me say that we already believe that our Big Bear Spring has been affected. Our recent inorganic chemical tests, as I've indicated, are showing a marked increase in sulphates and TDS. The flows in the last month have jumped from 115 gallons a minute up to around 129 gallons a minute. We have no explanation for that. We think that it may be related to where they're moving and storing water within the mine. We believe that even if they ceased their mining operation right now, that we have already had some impacts from the mining operation. And we really don't know how those are going to effect us over the long run.

So in conclusion, what I guess we're saying is we would like you to hold off and not approve this application until such time as this can be more thoroughly

investigated; have a better Chapter 7 on the hydrology to more adequately answer our concerns.

And I thank you for your time and now turn the mike over to Menco Copinga.

MR. COPINGA: My name is Menco Copinga. I'm the president of North Emery Water Users. It's a non-profitable organization, and there's about -- there's seven Board members. And there's two from each location: two from Elmo area, two from Cleveland area, two from Lawrence, and one at large.

Like I say, we are a nonprofitable organization, and we are a small company. We have about 417 connections; roughly around a thousand people that are on our system.

The spring at Birch Creek is really important to us. We have at this time about 150 gallons of water coming down the mountain. Of that 150 gallons, we've got 33 gallons coming out of Birch Springs, which is roughly about 20 percent of our water system. We're concerned that if we lose this 20 percent, that we won't be able to supply our demand for water in our area. We have still other springs up the canyon. We have a couple springs up in Rilda Canyon and several down the canyon, which is about, oh, roughly 20 percent from Birch, 50 percent from Rilda, and the rest of them is from the other springs down the canyon. We really can't afford to lose this

particular spring.

Also, last year we had a problem with the spring. This spring at the time was roughly flowing about 40 gallons per minute; and in just several days, it went up to almost 300 gallons per minute. The water was dirty. We had it checked, and it had coliforms in it, and it also had oil in it. We contacted DOGM, and they sent somebody down. We looked the situation over, and they couldn't find anything on the outside where they might have been some -- There might have been some water dumped someplace else, but we couldn't find any there. And over a few months, it just kind of decreasing back down again to where it has been going down ever since then. And like I said, it's about 33 gallons per minute at this time.

There are a lot of concerns, as Darrel mentioned, that are ours also, so I won't go into that. And we are concerned, and we would like to have something done about these springs.

MR. MITCHELL: Just so the record is clear, the increase of flow occurred when?

MR. COPINGA: It was -- The chart right here -- It was about January of '89; is that right?

MR. LEAMASTER: October.

MR. COPINGA: October of '89.

MR. LEAMASTER: It jumped up.

MR. COPINGA: It jumped up. And it went --

MR. LEAMASTER: To January.

MR. COPINGA: To January. And it started going back down in January. And from January, it went down from roughly 225 gallons to about 75 gallons in this one month. Okay. Thank you.

MR. MONTGOMERY: My name is Bryce Montgomery. I'm a consulting geologist. And I have made a study of the area at the request of the two Districts. And it's difficult to present here in brief all that is in the report, which will be presented to the Oil and Gas Division here as an exhibit. This is a chart of the rock formations present in the area, as reported by Danielson and others, who are with the U.S. Geological Survey. They did quite an extensive study of the area some time ago in the early 80's.

But I would like to just familiarize you with some of the names here, because we'll be talking about them, and give you some idea of the relationship of these rock formations, as we're talking about these springs and the mine and the coal and so forth.

We might liken these rock strata to the layers such as you would see in a sandwich or a layer cake. And the rock strata in the area are nearly horizontal. They do

have a very moderate dip of only a couple degrees to the south-southeast. And what we find in the area right in the bottom of the canyon, as you go up Huntington Canyon, the gray, prominent shales, which all of you, I'm sure, are familiar with, and I refer to as Mancos Shale Formation. Those are the shales in the bottom of the canyon that are quite impervious to infiltration movement of ground water.

Above the gray shales we have the Star Point sandstone, which is about 400 feet thick. And there's a gradation boundary here between the two. And it's the Star Point sandstone that the Birch Spring and the Big Bear Spring discharge from. So that's important to remember that.

Above the Star Point sandstone we have the Blackhawk Formation, which is approximately 700 feet thick. And it's the Blackhawk Formation that is made up of several sandstone beds embedded with thin shales and prominent coal beds which are mined. So the coals that are mined in the area come from the Blackhawk Formation: one near the base of the formation referred to as the Hiawatha, and then one up higher in the section that some refer to as the Blind Canyon, others as the Bear Canyon. The Castlegate sandstone overlies that section, and its prominent ledge up high on the ridge line that you see

near the top, and it's about 200 feet thick.

Above that is a sequence of sandstones and shales known as the Price River Formation, approximately 600 to 700 feet thick. And then the capping formation on the high area north of the mine; and that mine -- or high above the mine. And then to the north is the North Horn Formation, which is about 800 feet thick and is composed of embedded shales and sandstones.

The Flagstaff Limestone is found further west than south and north, but she wrote it off in the area that we have of concern here. There is a limestone bed, though, in the north part that resembles the Flagstaff, and some have called that the Flagstaff in the area.

It's important to keep in mind that these formations all have sandstone beds within them that are easily fractured, due to the structural forces incurred in the earth. And it's through these fractures and faults that the water is able to infiltrate from the precipitation on the high areas and move downward to permeable formations that become aquifers.

Let me put another slide here (indicating).

MS. NIELSON: Could we refer to this as Exhibit 8?

MR. MONTGOMERY: That would be fine.

MS. NIELSON: All right. And the next one will

be Exhibit 9.

MR. MITCHELL: Would you identify the source of these?

MR. MONTGOMERY: Yes. This is from Brown and others, who did some mapping for the U.S. Geological Survey. And the exact reference is in the report that you'll get a copy of. But this is one of the measured sections. Well, there are several measured sections taken right on the point in the vicinity of both springs and both the Trail Canyon Mine and the Bear Canyon Mine that is presently operating. It's an enlarged section merely showing the top of the Star Point Sandstone, then going up into the Blackhawk Formation. The reason I wanted you to see this is that this is the basal coal, the Hiawatha coal. This is the coal they're mining now presently in the Bear Canyon. And there was earlier a lower bed, which they also have referred to as the Hiawatha. But these geologists have shown it's not exactly parallel with it, although it's at the base of the Blackhawk Formation. But this scale gives you an idea. This is about ten feet on here, so it gives you an idea of the relationship of these coal beds.

So the Hiawatha coal bed is about 50 to 80 feet below the Bear Canyon coal bed, which is being mined at the present time. This bed was mined off in -- (indicat-

ing) -- in Trial Canyon Mine in earlier times, which closed about 1982. And I'll show a map here as to where that's located (indicating). This is a map by -- The base map is actually by Brown and others from U.S. Geological Survey, on which it showed the topographic contours of the area, the configuration of the present day land surface. And they have also shown in a heavy line here the contact between the Star Point Sandstone and the Blackhawk Formation. That's this heavy line (indicating). And that -- Those measured sections that I just had on display are from this area, which is the location of the Bear Canyon Mine, around this point (indicating), over to the Trail Canyon Mine, which is in this area (indicating) -- Co-Op Mine here (indicating).

MS. NIELSON: Are those sections actually marked on the map for reference, the locations?

MR. MONTGOMERY: Yes. They're numbered right here (indicating).

MS. NIELSON: Okay. Thank you. And we'll refer to this map as Exhibit 10.

MR. MONTGOMERY: All right. So what we have here is Bear Canyon coming down through here (indicating), and then the main Huntington Canyon going up through here (indicating). And this is the highway (indicating). And as I say, these background lines are

topographic lines which show the configuration of the surface.

So we have a big, long ridge extending from here northward (indicating). This is the south end of it. The highway cuts across here. Bear Canyon Road going up here (indicating). And superimposed on that topography we have geology, not in utmost detail, because it would clutter it even more than it is, and I have to acknowledge its pretty cluttered as it is. But what the U.S. Geological Survey geologists have found is that there's actually working within the rock strata -- this line up here with the arrows is an anticline, and then a syncline here (indicating). So, there is actually warping within the rock strata, even though there's generally dipping back this way to the southeast a couple of degrees. But since that warping took place in the rock strata, which helped to fracture the sandstone beds and create secondary permeability and porosity in them for the water to get into and move through and be stored in, we had later faulting -- normal faulting occurred -- which all of you heard of the Joe's Valley Fault? Well, these faults are associated with that, but just a little father east -- very prominent fault going right up through Huntington Canyon, which is known as the Pleasant Valley Fault. This is a fracture in the earth's crust wherein this side

-- the west side was moved up approximately 150 feet relative to the east side, which was dropped down.

We have a similar situation on this side, going up Bear Canyon. It's a very prominent fault. And we have the upthrown side on the east this time and the down-thrown side on the west. And that's about 150 feet of offset or displacement. So what we have is a unique situation with the gentle warping that I mentioned. We have what's known as a graben or a down-drop section of the earth's crust between here and here (indicating). And so even though this is a ridge and a high area going back to the north on Gentry Mountain, this is actually a down-drop section of the earth's crust between these two faults -- a graben. And it's interesting. It extends a long distance to the south and -- across Huntington Canyon into the coal mining area to the south, and then it extends much farther north.

And if I could shift the map here? Maybe if you wouldn't mind doing that for me, Darrel? That will save me stepping up there. If you could just shift that map?

MR. LEAMASTER: (Indicating)

MR. MONTGOMERY: Yea. Just like that. Uh-huh. Thank you. As you can see, I have only mapped up to just the Tie Fork Spring that already you've been acquainted with.

But you can see between these two prominent faults, we have many other faults that parallel them. And the offsets on these faults are anywhere from perhaps ten feet up to a hundred feet. They vary. In other words, with one side being dropped down or the other side being dropped up. And that's indicated by the symbols here (indicating). But, you see, this graben area, which extends northward up on the Gentry Mountain, is a very unique area that is very broken up. Besides the faults here, the little dotted lines indicate very prominent joints. So, there's many joints that parallel these faults. The precipitation on the high mountain area, which is about 11,000 feet up on Gentry Mountain, part of it infiltrates into the fractures.

Now, obviously, as water goes down through the fractures, if there's a permeable formation, some of it will move into it like a sandstone bed. These prominent faults, though, they tend to transact both the sandstone and the shale beds and carry water even down through the shale beds to a deeper depth. The aquifer that we're concerned about down here at the springs, is actually made up of the sandstone; not only of the Star Point Formation, but of the lower part of the Blackhawk Formation. And water from this high area precipitation is able to infiltrate and eventually get down to those

prominent beds.

If I could have you shift that back up again now, Darrel?

MR. LEAMASTER: (Indicating)

MR. MONTGOMERY: Thank you. Just a little bit more. That's fine. Thank you.

You see, then these faults act as a -- conduits for the water to move southward down. And that is illustrated by these purple dash-hyphen dotted lines. Those lines represent the dynamic surface of the Blackhawk-Star Point Formation aquifer. And they represent -- They're known as potentiometric contours or the potentiometric surface. That's the elevation to which the ground water will rise in those aquifers--or in those formations. I'm combining them as one aquifer because they're closely related. The water, then, is moving normal to those contours -- moving like this (indicating) to the south and southwest from the north.

And as you can see between these two major faults, the effect is to kind of enclose, like a large trough, the ground water moving from the north to the south.

Now, this is the location of the Bear Canyon Spring right here (indicating). This is the location of the Birch Spring (indicating). Birch Spring is located directly on one of these faults that has approximately

twenty feet of offset. This fault goes northward and branches into several other faults which go clear northward into the high area of precipitation.

Bear Canyon comes out along three prominent joints which have no appreciable offset on them. But it is very close to this fault here (indicating). And as is shown, these springs are within this graben area between these two prominent faults: the Bear Canyon Fault and the Pleasant Valley Fault.

So the waters from the area of infiltration is southward to recharge these formations and is moving directly through the mining area. This heavy black line is the present boundary or permit area for the Bear Canyon Mine. And the jagged black line is the area that has been mined or is under mining operations. So for the old Trail Canyon Mine, which is abandoned and pillars have been pulled and there's actually subsidence taking place within the mine -- that's this area right here -- the present day mine is here (indicating). And they have a permit back to mine in this area (indicating). The proposed area that they're wanting to expand is the heavy dotted line here (indicating) and also an 80-acre tract down here (indicating). So you can see, the mine area is between the spring discharge points and the recharge area to the north. And these very prominent joints and faults

are the avenues for this water to move to the springs. And some of the water that's being encountered in the mines that normally would move downward toward these springs has been intercepted in their mining operations and either has been poorly used or diverted away from the natural fracture system that would allow it to continue on its journey, as it naturally did to recharge these springs.

Now, as was pointed out to you, in the Fall of 1989 Birch Spring experienced an unusual abnormal situation. If you would compare the -- which I could do again. I could put the charts on to compare the precipitation to the spring discharge. This high rise that was mentioned in the Fall of '89 into January of '90 was very abnormal and also a release of about 90-acre feet of water out of this area into this fault system. And once that storage and high head had flushed through this area, it dropped back down again. But it carried with it not only a high amount of sediment, but also oil residues and coliform bacteria -- carried it down into this area (indicating).

Now, this mine is collapsed now, but it provides a very easy storage area for ground water that's coming from the north to collect in this area (indicating).

And under an increased head of storage in this old caved area, it's very easy to understand how water could

be held up in storage and a rise in head until enough pressure was created to cause a break through along the fault system and discharge up to the spring. And then once the temporary storage is diminished in this area, then the flows dropped back down to normal again. And that's my interpretation as to what happened there.

Now, while I got this map here, I would like to point out that in this area along the face of these cliffs, there is this water discharging now, spilling to the surface, that appears to be out of the ordinary. In fact, there's no sustained vegetation there to indicate that spring water has been flowing for a long time in the past. And yet there's been an appreciable amount of water. And I'll show some pictures illustrating that. It's discharging out of the cliff near the base of the mining operations, spilling down the face of the cliff over the shales and forming large icicly deposits in this vicinity (indicating). And even some of this water now apparently is able to get back into some of the fracture zones. Because the recent analysis in January of 1991 showed that the sulphates have doubled in the spring from what they have been over the past. And the total dissolved mineral solids have gone up better than 25 percent in that spring.

So, it's quite obvious that the mining operation in

this area has had an effect on these springs. And as it was pointed out by Darrel, these springs have gone down in their rate of flow.

I would like to show a cross section now that will be from the Tie Fork Spring down through this area and through the Bear Canyon Spring and to this point (indicating). Can you turn it around?

MR. LEAMASTER: (Indicating)

MR. MONTGOMERY: Yea, thank you. This is northwest up here (indicating). And, by the way, this is the true scale on the other map. So the relationships here are not abnormal, so far as the vertical scale, which is often done on cross sections. If you're to take a slice down through the earth's section in this area, this is what it would look like. This is the profile of the topography here at the top. The different letters designate those different rock formations that I mentioned earlier. Here is Tie Fork Spring and Tie Fork here (indicating). The water there is discharging from a drill hole that was drilled down into the Star Point Sandstone and comes up to the ground level. This heavy dot-dash purple line here represents that potentiometric surface of the Star Point-Blackhawk aquifer. And as you can see, it has a gradient higher here and moving down this way (indicating). Now, of course, as it cuts across

faults, there will be some adjustment in it, and I can't show that detail because I don't know exactly how much it is. But, in general, it stays approximately on this line; and as it crosses the faults, there are some irregularities. But we do have a drill hole that was drilled up on the high mountain area by Savage Energy Services -- drill hole T-4, which did penetrate these units. Besides we have mines and drill holes, but further north in the recharge area west of Hiawatha that gives us further control on what the elevation is on that surface.

Here it was fifteen hundred feet from the surface. And then as we move further south -- if you wouldn't mind now slipping that down for me, Darrel?

MR. LEAMASTER: (Indicating)

MR. MONTGOMERY: That's fine. Thank you. As we move farther south, you can see that gradient just dropping and to where -- Here is the discharge point of Bear Canyon Spring (indicating). That's the top of that gradient (indicating). Here is the mine operation from here -- this line here to here (indicating). And the proposed operation would extend it farther over to here (indicating). And as you can see, this heavy black line here represents the Bear Canyon coal that is presently being removed in the Bear Canyon Mine. Now, the gradient for this major aquifer is down below that surface,

although we do have some water through these sandstones working its way down and they have intercepted some of that water. Now, especially in the north end of their mine, they've encountered about a hundred gallons per minute reported in this area (indicating). And they are intercepting and using that water or -- and some of it is being used out of the mine down for other uses, both inside and outside the mine.

So you can see, that water that they are intercepting and -- that's not able to get back into the fracture system; is not able to get back into this recharge area and contribute to the springs. This applies both to the Birch Spring and the Big Bear Spring. Even though this line goes through the Big Bear Spring, it applies equally to the Birch Spring. In fact, the Birch Spring has higher permeability delivering water to it than does the Big Bear, because of the faulting.

But you'll notice that if they continue to move updip to the north, which is only about 2 degrees, compared to the slope of this potentiometric surface, which is much steeper, they're going to come near intersecting that main aquifer. In fact, if they go in on the lower coal, the Hiawatha coal, which is about on this line (indicating), they will intersect it sooner; in fact, it will have a greater impact than the mining of the upper

coal.

But this gives you an understanding; a relationship of how the coal bed is relative to this potentiometric surface, this spring elevation and the boundaries of the existing mine and the proposed mine.

It's very obvious to me that as this operation moves further north, more water will be encountered. If that water is intersected and not allowed to get back into its natural conduit system to contribute to both springs, it will subtract from their supply. Furthermore, if contaminants in the mining operation get in to these faults and fractures, they will carry those contaminates down towards the springs.

Could I have the next sheet on there, Darrel?

MS. NIELSON: Mr. Montgomery, can we refer to that cross section as Exhibit 11?

MR. MONTGOMERY: Sure.

MS. NIELSON: And I believe that was AA Prime?

MR. MONTGOMERY: That's correct. You're right.

MS. NIELSON: Thank you. And this one will be Exhibit 12.

MR. MONTGOMERY: Okay. And as I mentioned, Dianne, we'll provide the full report to you which will have all of these in it, and you'll have that.

MS. NIELSON: Fine. Thank you.

MR. MONTGOMERY: This shows a close-up of the Big Bear Spring issuing from prominent joints -- three very prominent joints here, and these are the discharge points that are collected into this box (indicating). This is the Star Point Sandstone; the lower section of it. Mancos Shale is concealed by alluvium here (indicating), unconsolidated fill in the valley. But it would be below here (indicating). And so you see, the water comes down, and since it can't go deeper, it is reflected outward, and the erosion has intersected these joints and made it very easy for it to come to the surface. In fact, some of this water has come out a little bit higher than here (indicating).

If I could have the next one, please?

MR. LEAMASTER: (Indicating)

MR. MONTGOMERY: Now, this is a view looking at that same sandstone bed, the spring area in this area; and looking back up higher. And this shows, then, the approximate contact of the Star Point Sandstone in this area relative to the Blackhawk Formation above. And the coal beds are in this vicinity (indicating). In this area right here (indicating), there's an appreciable amount of water spilling to the surface now that appears to be abnormal. Possibly some may have spilled naturally in the past, but it appears to be much more than has

occurred in the past.

If I could have the next one, please?

MR. LEAMASTER: (Indicating)

MR. MONTGOMERY: We're looking northwest there.

MS. NIELSON: This photo will be 13, and the next one will be 14.

MR. MONTGOMERY: This is a little closer now and a little higher. And this is Big Bear Canyon here (indicating). This white or these icicles build up (indicating). It doesn't show all the area, but there's some here. There's some out here. There's some down below. These are mainly shale sections here, and this is sandstone, the upper part of the Star Point; and this is up in the Blackhawk (indicating). And there's an appreciable amount of water spilling out and freezing in the form of icicles here (indicating). Some of this water is meeting, running down over these shelves and then eventually gets into a bench area here and some back into the fractures of the spring directly below. I believe that part of the sulphates, at least, some, perhaps, is coming from in the mine, but part of it is probably just coming from leaching these shales as it spills down over them.

If I could have the next one, it will be a closer view, please.

MR. LEAMASTER: (Indicating)

MR. MONTGOMERY: Now, this is a closer view of those sandstone beds, water spilling out of them, and then shale beds interbedded sandstone here (indicating). This is an appreciable amount of water. It's hard to say how much water it is. I made a rough estimate of 50 gallons per minute for the total of the whole area. And that's just a rough estimate. But it is an appreciable amount of water that's spilling out of the base of the Blackhawk into the top of the Star Point; and then where it hits shales, it's spilling out to the surface.

Now, if there was faults right in this area (indicating), some of this water would go down the faults lower down. There is a fault right to the right, or east here, which does not show on the photo.

If I could have the next one, please?

MS. NIELSON: That photo will be 15, and the next one 16.

MR. LEAMASTER: (Indicating)

MR. MONTGOMERY: Already you've been introduced to the hydrograph here of the flows of the Big Bear Spring over the years. I've added a few years onto this graph that was prepared earlier. But that's compared with the snow-water equivalent, the average snow-water equivalent by this purple line. You can see that the highs in the flows from this spring and the actual water

from snow melt, there's about a three-month lag or delay between those peaks. Now, that's for these earlier years. Once you get down to about 1987 to the present, you'll notice the peak has dropped off. And it's true, as is pointed out by this graph, this is the precipitation here (indicating). After you get to '87, it dropped down to -- it flattened out here. But notice that the hump pretty much has been removed. These lower lines here represent from that 1987 to 1990. And so you can see that the -- besides the impact of the lower precipitation on the area, there still appears to be an additional impact occurring to the spring.

The next one, please?

MR. LEAMASTER: (Indicating)

MR. MONTGOMERY: This is the Birch Spring, and they only have a short record on those. There's, unfortunately, '89 and '90. But this shows what was pointed out earlier by the president of the District; that this has been the flow just under a hundred (indicating) -- between 50 and 100 gallons a minute. And then in October of 1989, this thing jumped up -- clear up 230 gallons a minute and held up at that flow clear through January. If you can look at this like a cycle, then the next year's flow is this different symbol here (indicating) -- turning in here (indicating). And then it just goes

right back off like it had been heretofore. Very abnormal situation.

Let's see. There's that -- There's one more, Tie Fork Spring, please.

MR. LEAMASTER: (Indicating)

MS. NIELSON: Okay. And we'll refer to the Birch Spring graph as Exhibit 17 and Tie Fork as 18.

MR. MONTGOMERY: Okay. Here's the Tie Fork Spring. And there is mining going on just north of the Tie Fork Spring beyond the Co-Op Mine. And these curves tend to parallel each other from '83 to '89, except this one in 1988. There was a high jump in it, and then it dropped back down again. And I think that's probably influenced by mining operations to the north. And the reason I put this on here is I would like to emphasize that everything in the area, especially within that graben, has an influence on the recharge to the Birch Spring and the Big Bear Spring.

The coal mining operations to the north also have an effect. And any water that they pull out in their operations, which has been reported by Danielson--that they're pulling some water out and putting into Cedar Creek back to the east -- it flows away from the ground water system and cannot get back into it. And, therefore, it subtracts from the recharge to those springs to the south

and has partial impact on them as does the Co-Op Mining operation.

I think -- And I'd just like to conclude for you that my study has shown that both the Trail Canyon Mine and the Bear Canyon Mine have impacted both of these springs. I think the impact to the Big Bear Spring is less than it is to the Birch Spring, and it is hard to quantify, especially with the lack of data back during the years when they were not mining and because of the drought that's occurred since '77. But that's my conclusion: that there has been an impact and -- but it is difficult to quantify. Thank you.

Perhaps later on, if there are questions, I'd be glad to try to answer them.

MS. NIELSON: Mr. Montgomery, could I clarify?

MR. MONTGOMERY: Yes.

MS. NIELSON: You indicated there will be a copy of this Report for the Division. Is there also a copy for Co-Op Mine, or could one be made? It would be helpful to them.

MR. MONTGOMERY: It would be up to these Districts. I don't know why they wouldn't want to supply a copy to them, and certainly a copy could be made, as far as I'm concerned -- made available to them.

MS. NIELSON: Okay. I would ask that the

counsel for Castle Valley and the other service districts make that report available to Co-Op Mine.

MR. LEAMASTER: Yes, sir.

MS. NIELSON: Thank you.

(Whereupon, an off-the-record discussion was had.)

MR. JOHANSEN: My name is Scott Johansen. I'm the City Attorney for Huntington. And I just want to briefly present the Council and Mayor from Huntington City. They have asked me to appear and underscore some of what we think are the major issues here.

The first one is that it is important to us in the City that we be able, in this area, to develop our mineral resources. And if there is a way to do that, we don't wish to discourage that. It's good for our economy. This County depends upon the coal being mined. And if there is any way to accomplish that, we wish to accommodate it.

There is one concern which overrides the development of our natural resources by far, and that is the preservation of our culinary water supply. And that is so very important to all of us here. And if the choice had to be made between protecting the culinary water supply for some four thousand people out of eleven thousand that reside in the County, that we would have to opt in favor

of discontinuing the development of the mineral resources and preserve the water supply.

The purpose of the mining acts, and particularly Section 40-10-2, states that we are to assure that there is no mining where reclamation is not feasible. And based upon the data that you have been presented tonight, we are very concerned that further mining in this area by the Co-Op Mine would be of such irreparable effect to both of the two springs involved, that reclamation would not be feasible, and we would not be able to withstand the impact of that continued mining activity.

If that destruction of our culinary water source cannot be replaced, if it cannot be mitigated, then the survival of Huntington City and, indeed, of Cleveland and Elmo and also the North Emery Water User customers -- which is the entire north end of Emery County -- is at stake. And we believe this is a very serious health, safety and welfare issue which should be addressed by the Division.

The second point that the Mayor has asked me to underscore is that the potential legal liability to the Co-Op Mining people is just tremendous. If these potential effects are not considered and dealt with upon the front end of any resource development, the possibility of liability to downstream users and the legal liability and

damages that would flow from that are just phenomenal. And it's somewhat amazing to me that these potential liabilities have not been dealt with in a more thorough way in the mine plan application.

We might take a less activist view of this mine application, if the application were not set against the backdrop of the Co-Op Mine's history of noncompliance in the past. And that's the third point I wish to emphasize. From a standpoint of the State Engineer, from the standpoint of the Forest Service, from the standpoint of Division of Oil, Gas and Mining, County zoning; almost every regulatory agency which Co-Op has dealt with over the past, has a long history of disinclination on the part of the Co-Op to be very seriously interested in compliance. And I would refer, as a basis for that, to the public records that are already on file with the Division.

Based on that, the City has asked me to request some eight points of relief, which correspond somewhat to the letter which was written by the Service District. And those relief -- these items of relief which I'm about to mention, I believe are all authorized by Section 40-10-6 of the Utah Code.

The first one is that we would request that the Division not renew the mine plan with respect to the

ongoing operations until the Co-Op Mine does be compliant, which it should have been doing all along with respect to monitoring water flow and complying with the other requirements of the Division. That corresponds with Item Number 6 in the Service District's letter to the Division.

Secondly, we are requesting that the revision of the mine plan to add a new area to the north be denied altogether. It is apparent, from a hydrological study, that any mining further to the north could have disastrous effect on our water table as it intersects the water plane. That corresponds to Item Number 2 in the Service District's letter.

Thirdly, we are asking that if the mine plan is reauthorized, or if the revision is authorized to add the new area to the north, that the Division require the Co-Op to engage in adequate testing and monitoring of the water situation at the Co-Op's expense; and that that request apply, even if operations cease. It is apparent from the Birch Spring flow data that even after the Co-Op ceased operation on the Trail Canyon side, that their mining operations had significant effect on the Birch Spring.

Fourth, we would ask that Huntington City be copied on all water flow data and other water data that is

supplied to the Division from the Co-Op Mine.

Fifth, we believe that it is essential to understanding of water flow in this area, in this graben, that the Co-Op be required to drill test holes north of the proposed mine site so that we can monitor the water flow through the earth north of where the mine area is. That corresponds to Item Number 6 in the Service District's letter.

Number six, we are requesting that any water which is intersected -- intercepted in the mine area be piped down to where it can be put back into the City's system, which is most likely the Big Bear Canyon Spring area. That corresponds with Number 1 in the Service District's letter.

Seventh, we are asking that under Section 10-8-14 of the Utah Code, that the Division require the Co-Op to bond for any potential loss of water that -- or provide other sufficient surety for any potential loss of water either to North Emery or to the towns of Cleveland and Elmo or to the city of Huntington.

And, lastly, we are asking that any permit that the Division does see fit to grant, would be limited to five years under Section 40-10-9, because of the serious, serious potential effects of the interruption of the water supply; that no extensions beyond the five-year

period be granted.

The only other request I would make is that the City be granted an extra few days, after the conclusion of this hearing, to submit a written response to what occurs here. And with that, I would -- with your permission -- I would turn the time over to Jeff Appel, who represents North Emery Water Users.

MR. APPEL: Thank you. My name is Jeffery Appel. And as Mr. Johansen indicated, I represent the North Emery Water Users' Association. As an initial issue, I'm somewhat concerned about the burden of proof. I understand we're proceeding first. I think there's probably a two-prong focus here with respect to that burden of proof under your own rules, I believe.

The revision area -- the new areas, the Applicant would bear the burden of proof. I understand that the rules may indicate that we would bear the burden of proof on the existing area. Whereas, due to some of the past problems and the noncompliance with respect to the particular permit, I'm not so sure that should be the case. And I'll get into those right now.

These are all in your files. I've been through portions of them -- not all of them. But as recently as November 27, 1990, there's a permit deficiency letter in there in which the Co-Op is cited for 18 violations. And

I won't bother to enumerate those. You're all familiar with them. But many of them were water related. One of the most important, based upon Mr. Montgomery's testimony, was that we were required to restore the natural drainage pattern. Well, the natural drainage pattern isn't what it used to be, and they've done nothing that we can see to restore it. And we suffered some significant problems as a result of that failure.

I think Mr. Montgomery's testimony is quite clear on that. There's a connection between those activities and -- more clearly with the Birch Spring -- and I believe his opinion is that it also effects the Bear Canyon Spring. Those problems have to be dealt with, as these are culinary water supplies for a number of people down here; in fact, most of the people down here (indicating).

Some of the other problems that are recited in your files were Co-Op's failure to maintain proper diversions, culverts and sediment ponds; to install environmental control, measures; to avoid plugging of erosion inlets and outlets; to properly monitor surface and ground water sources; to maintain diversion ditches; to pass disturbed surface drainage to a treatment facility before release; to create and submit current maps of sufficient details to determine if Co-Op is abiding by the state and federal regulations for protection of water.

Now, this gets back to the burden of proof problem. I can understand the staying of burden of proof on someone or giving them that benefit if they had been complying. These people have been out of compliance, from what I can tell of the file, nearly the whole time that they have been in operation. And we've had a significant event at Birch Springs that our expert indicates is a direct result of the mine activities and their failure to comply with their drainage plan.

Now, it's interesting. I have some quotations from that plan, and I won't belabor this, either. But this is what they said in Section 3.5.3.1: "No significant impacts to the ground water system are expected from mining operations. The ground water monitoring plan discussed in Chapter 7 will provide a means to follow the possible effect of the mining activities on the ground water system." Further on, "If necessary, mechanical devices will be installed to remove grease and oil that might be present in the water before it is used for dust suppression." Further on, "In the unlikely event that mining adversely effects a water source, Co-Op will select an alternative, after considering all possibilities of each specific circumstance."

Well, that's interesting, because the people who caught the event were my clients. There have been a

total of two monitoring reports submitted on Birch Spring. I'm not sure quite what has happened on Bear Spring, although I'll be happy to put that together in my supplementation, or perhaps Mr. Johansen will do that.

But the testimony shows that the problem evented in Birch Spring was mine caused. And I don't think it's a question of if the injury may occur to these people; it's a matter of when. And we're lucky that something significant hasn't happened to date.

We concur with the requests that Mr. Johansen has set forth previously, and I won't belabor those. But I will make the following statements: I think that they should have to meet, for once, the specific requirements for this entire area, including the effect in the adjacent area. And this is with respect to both the new areas and the old areas; the old area being that for which they're asking for renewal. I think the initial permit was granted without adequate description of premining hydrologic resources. For instance, the Birch Spring was not shown on some of the maps. They didn't deal with it. The record is fairly ripe with omissions in that regard. And we need to go back and figure out what they should have been doing with respect to the initial permit and then move forward, if we move forward.

So, we'd request that the permit be suspended, or

the renewal stayed and the permit not granted, until a thorough inventory is done by the numbers; meaning in accordance with the complete Code, before any renewal or addition to the permit is had. We also think that we have a need for immediate intensive monitoring, at Co-Op's expense, of all water sources and hydrologic resources to prevent something horrible happening that could effect all these people in this valley. We could have another event at any time. And I think it would be prudent for them to begin looking immediately for alternative sources or some means to protect the existing sources, whether it's treatment or otherwise. I understand that's contemplated within the studies, but we need to start now before something horrible happens.

You've heard the problems that were quite well articulated by Mr. Montgomery and the people who represent the companies as their officers. There are also numerous violations on behalf of Co-Op. I don't think that this initial permit should have occurred in the fashion it has. We have the opportunity now to rectify that. I think we should take that opportunity at this particular point in time. We need to gather further data and ensure that some sort of tragic event really doesn't occur.

Now, once again, they have the right to mine, I think, under the regulations, if they take care of these

particular sources; being sure if they -- They can continue to mine if they provide for alternative sources. We don't have any firm grasp -- I don't think anybody has a firm grasp of what is really going to happen up there if mining continues, except if they were to stop right now, there could be further problems with the springs, based upon what Mr. Montgomery has told us tonight.

And I, too, would ask for ten days from today to supplement my testimony in writing, at which time I'll provide further details. Thank you.

MS. NIELSON: Thank you. Did you have anything else to say, Mr. Leamaster?

MR. LEAMASTER: No. One thought I failed to mention, Big Bear Spring was the firs t--

MS. NIELSON: Could you maybe step up to the microphone?

MR. LEAMASTER: This maybe isn't too significant, but I think I wanted to express the importance of Big Bear Spring again. Big Bear Spring was the first spring that was ever developed as a water source for Huntington City. And we have not been able to exactly pinpoint the date that it was first used, but we found some maps from UDOT that showed water lines in that area as early as 1920. We know for sure that it was in their system as early as 1930. So for at least 60 years, that

has been the main source of water for Huntington City. And as I mentioned, in the last four or five years we've also put Cleveland and Elmo on that spring source.

MS. NIELSON: Thank you.

MR. LEAMASTER: That's all we have.

MS. NIELSON: All right. I suggest we take a 15-minute break and resume at 8:15. Thank you.

(Whereupon, a short recess was taken.)

MS. NIELSON: We'll go back on the record. Mr. Leamaster?

MR. LEAMASTER: Could I just let him --

MS. NIELSON: Excuse me.

MR. MONTGOMERY: Bryce Montgomery. I just wanted to emphasize that in the cross section I presented and in the report, the main concern is expressed relative to the upper coal seam that's being currently mined in the Bear Canyon Mine -- the Bear Canyon coal seam. And my remarks with regard to what may happen as that seam is extended further north under the proposed permit area, that seam is somewhat higher than the Hiawatha coal seam. And the permit, as I understand it -- the new permit is requesting not only the right to mine that seam, but also to go back down and mine on the Hiawatha seam. Since that seam is at a lower elevation, as they extend it up-dip

northward, it will intersect the potentiometric surface of the Blackhawk-Star Point aquifer much more sooner -- quicker than would the upper seam mining. I just wanted to emphasize that. So the impact would be much greater.

MS. NIELSON: Okay. Is that clear in the report?

MR. MONTGOMERY: I think the report emphasizes the upper seam. That's why I wanted to emphasize this now, so that -- because the understanding I had at the time I made the report was it was more directed toward the extension of the present mining; the mining of the upper seam of Bear Canyon, rather than going down and picking up this Hiawatha seam. But I understand that the permit is requesting both, so I wanted to emphasize that.

MS. NIELSON: Thank you. The Division recognizes that we've received a report dated January 28, 1991 to Mr. Darrel V. Leamaster and Mr. Menco Copinga from S. Bryce Montgomery entitled "Hydrologic investigation and report of Big Bear Spring and Birch Spring relative to Co-Op Mining Company, past, present and proposed coal mining, Township 15-16 South, Range 7 East, Salt Lake Base & Meridian, Emery County, Utah." We will receive that as Exhibit 19, recognizing that the exhibits which Mr. Montgomery presented in his testimony are included within this report.

Mrs. Wilson, did you wish to make any comments on behalf of Huntington-Cleveland Irrigation Company?

MRS. WILSON: Yes. I have just a statement I can leave, or do you want me to read it?

MS. NIELSON: Whichever you would prefer.

MRS. WILSON: Okay. He's got -- made a statement. He wasn't able to be here tonight.

MS. NIELSON: Would you identify yourself for the record, please?

MRS. WILSON: I'm Lucille Wilson. I'm Ardeth Wilson's wife. He's unable to be here tonight. And I'm representing Huntington-Cleveland Irrigation Company for him. He made a statement that he said I could just read, and it says, "The Huntington-Cleveland Irrigation Company is concerned about the mining operations of the Co-Op Mine. Water intercepted by the mining operations, taken inside the mine, is taking water from the streams and springs in the mountain top. Huntington-Cleveland Irrigation Company has the first water filings in the Huntington Creek Drainage. Water intercepted by the Co-Op Mine's mining process is taking water that is covered under the Huntington-Cleveland Irrigation Company filings. The Board of Directors of the Huntington-Cleveland Irrigation Company want to go on file this 5th day of February, 1991, showing our concerns about the mining

operation at the Co-Op Mine, and the monitoring and measuring of this water."

MS. NIELSON: Thank you. We'll accept this letter dated February 5, 1991 as Exhibit 20. Are there any other comments that North Emery Water Users' Association want to make?

All right. At this time I would like to ask Co-Op Mining if they would like to present their case and make any comments. And would you step to the podium and state your name and affiliation again for the record?

MR. OWEN: I'm Wendell Owen with the Co-Op Mining Company. As far as any technical information or technical data, I'm going to leave that to our consultant, Mr. Kim Mangum. Of course, any legal answers or legal questions we'll leave up to our attorney, Carl Kingston.

The main thing I want to do is say that we are also concerned about the water in the area. We have tried in the past to cooperate. We do presently have an agreement with Huntington City in regards to the spring. And I believe that agreement is a matter of record in the permit also. That agreement was reached here a number of years ago, I think when we first went into the area.

SPECTATOR: 1976, Wendell.

MR. OWEN: Yes, uh-huh -- and is still in

effect. And there were certain limitations as to what would trigger the agreement -- the terms of the agreement. And those limitations have never been breached. In other words, there has not been a sudden drop to the extent that would trigger the conditions of that agreement.

And like I say, we want to continue to cooperate. We are concerned. We want to take whatever measures we need to to ensure the water supply of the people of Emery County. We feel like there can be measures taken and agreements, or whatever, made that can ensure that water supply for the people of the County, and at the same time allow us to continue mining, which, of course, we are very anxious to do.

Now, like I say, I'm going to leave most of the technical part of it to these other people. But a couple of questions I would -- or a couple of answers I would like to give, or remarks, to some of the things that were brought out.

There's been several references to our water monitoring and to our lack of compliance. We do monitor the water. That has been one of the requirements of the Division of Oil, Gas & Mining. We keep those monitoring records. We make them available to the Division and to their representatives when they come on-site. As far as

Huntington Spring, we have not had access, since they keep it locked to the spring itself. As far as water quality, we have monitored the overflow. There is always a little bit overflows that I guess we're catching there. I wouldn't say an "overflow;" probably from small rivulets that come at different places in that area. We have monitored the quality in those places. As far as the quantity, I was of the understanding of our previous agreement that they were going to monitor the quantity and send us the information, which they have. Annually they've sent us the quantity and monitored all the springs, so we didn't feel like we were failing in our monitoring, as far as the monitoring of the spring or of the other water in the areas.

Now, in regards to the showing of ice on the ledges, as long as I can remember there has been seepage indication in the summertime and ice in the wintertime. Now, I'm not enough of an expert or hydrologist to try to determine how much there is or as to what extent the problem is.

Incidentally, I have, in walking farther up Bear Canyon to the north, noticed there are similar accumulations of ice on the ledges to the east; the side that we are not mining. So apparently, it is not necessarily a peculiarity of that particular area of a mining -- part

of a mining operation.

Now, one other thing that I would like to bring to the attention of this Division: like I say, we have tried to cooperate. Any who have requested returning to the mine, we have taken them and tried to do all we can there.

Now, Mr. Montgomery did make a tour through our mine. In his statement he mentioned that water was probably traveling down through the fault zones into the lower strata to reach the spring. And I can understand now why he's -- one of his main interests in making that tour through the mine was to visit the faulted areas. He told me he crossed the fault in the mine -- which we did in our tour -- both of those areas that he requested that we go to. And at those places, we found little or no water in any of those fault areas that we visited.

Now, we do -- in mining operations, we do, as we mine, encounter a certain amount of water. It's fairly normal. Any mine I've been in does it. It dries up behind us. It's not always encountered -- a little water. Some places more than others. As was pointed out by Mr. Montgomery, as you're in there -- as you get in your various dips and rolls in the seams there -- and, of course, it will drift down into the bottom of the row. And at that point, why, the water will drip out faster.

And in -- At those points, why, usually there's no water standing on the row.

But aside from that, I cannot see that we have done anything any different in our mining operation than we have always done. And I don't know that there has been any appreciable change in anything in the way of un-accounting that brings to my mind.

So, like I say, aside from that, I'll leave the technical part of it to Mr. Mangum. I would like to express again that we do want to work with these water agencies. We want to do everything that we can to cooperate and to make them feel they are not in danger. But we do feel like we can mine coal and continue to mine coal without depriving Emery County of their water. Thank you.

Would it be all right, then, if Mr. Mangum --

MS. NIELSON: Please. And would you identify yourself for the record?

MR. MANGUM: My name is Kimberly C. Mangum. I'm a registered professional engineer in the State of Utah -- civil engineer. I'm a consultant for Co-Op Mining Company. I have been working for them for the last few years. I appreciate some information that's been brought forth this evening and Mr. Montgomery's expertise. However, much of the information which has been brought out

is new to us and needs to be addressed specifically. So, we reserve a request of that opportunity to review the report and some of the other information which has been brought forth, as well as any written information which is introduced in the next few days. We request an opportunity to review that and deal with each item on as specific basis.

In regards to some of the information which was brought forth, I have here a graph which was sent to me by Mr. --

THE REPORTER: Can you speak up a little bit? It's a little bit hard to hear you?

MS. NIELSON: Maybe you can turn the microphone up just a little bit more.

MR. MANGUM: (Indicating)

MS. NIELSON: That will help.

MR. MANGUM: I have a graph here that was sent to me by Mr. Leamaster, where he had plotted the flow of Big Bear Springs and shown -- shows the precipitation also on the same graph. Also, there is -- There is also a line which shows the flow of Little Bear Springs, which is outside of what was referred to as a graben area by Mr. Montgomery. We feel that they could quite correctly follow the precipitation that is given on the graph. If you cannot see it from here, it is a green line that

flows -- starts here during the high rain period, which we are all aware we had and --

MS. NIELSON: Can we ask you, maybe, to hold it up to show it a little bit so we can see all of it?

MR. MANGUM: That's okay. We're not dealing with the exact numbers; just curves here. As you can see here (indicating), this is Tie Fork Spring along the bottom. This particular increase in flow was pointed out by Mr. Montgomery. It occurred in late 1988, which is approximately one year from when the increase in flow occurred at Birch Spring. The explanation which Mr. Montgomery gave was that it would be related, or possibly related, to mining activity to the north. But there is a time period between events that occur to the north and what would occur to the south. And there's a possibility of a connection with these two events of Tie Fork and at Birch Spring in increase in flow.

There is also an increase in flow on the Little Bear Spring at approximately the same time as the increase in flow at Birch Spring. There is no geological connection, according to what Mr. Montgomery showed us. They are not in the same graben or fault valley.

MS. NIELSON: Could you clarify the time frame of that increase, if you could read off the graph itself?

MR. MANGUM: It occurred September-October --

September-October of 1989, which is the same time period as the increase in flow in Birch Spring.

MS. NIELSON: Thank you.

MR. MANGUM: Also, I'm sure, because of space on the graph -- but if we look at the one behind here -- Can you drop that one down? The precipitation comes down -- It shows the flow rate back until 1982. All of the graphs that were shown previously do not go back that far. If you notice, the rainfall crosses at different points as it crossed in latter years during the drought. One of the key points -- thank you -- that I would like to state was it is very likely and most probable, in my opinion, is that the event which instigated this hearing was -- is the low flow.

And we are all aware of the correlation -- the direct correlation we have with precipitation. And that is quite clear. Mr. Montgomery, in his -- when he was up here, said that he felt there was a connection also with mining. He said, according to the graph, that -- where he said there were no more increases during the years, he said that he felt that would be attributable to mining activity. He did not show a direct correlation of why that would be attributable to mining activity; an aquifer lower to the fault zone. It is not an aquifer, as he also stated. Water would, at a low flow, would not have

the same direct increases as it does during a higher flow year. The flow from a spring would be more level in low precipitation years because of the lag of the water before it gets into the spring.

So, I don't feel that there is an attributable correlation that can be shown there.

MS. NIELSON: Mr. Mangum, could I clarify? Are these exhibits equivalent to the ones that were shown earlier by Mr. Montgomery, or do you have additional copies of those that we could include for the record?

MR. MANGUM: We will have to make copies of those. I received that information directly from Mr. -- from Darrel Leamaster. So, that information would be the same, unless he has changed in between -- the same information. But it includes more -- additional information from what was presented in his; specifically, the Little Bear and other things.

MS. NIELSON: Okay. If you could provide copies of those, and we'll designate them as Exhibits A and B.

MR. LEAMASTER: Maybe I could clarify. The exhibits I had were the same information. Those are long-time period and are basically the same information. I just presented them a little differently.

MS. NIELSON: Okay. We recognize they're

similar. If it is possible to provide us with copies, I would appreciate it. And we'll designate those Exhibits A and B.

MR. MANGUM: That would be fine.

MS. NIELSON: Thank you.

MR. MANGUM: There has been much talk about the effect of mining on the water. The water that is intercepted in the mine has--is left almost exclusively within the mine. Where it goes in, it is taken into sumps. It does not disappear. It's not evaporated into the area. It stays in the ground. The mine is above the line, which is referred to as the aquifer, which would be the top of that bed in which the water flows. And there is no reason to believe that because that water is -- must stay in the mine, that it is really not entering into that same bed.

As far as the contamination which was purportedly done to Birch Spring, the -- When the increase in flow occurred, there was seep-out from the canyon. And that water flowed over and into the inlet where the water was taken from. There are -- There were deer droppings, there were birds on the hills. And that coliform increase would -- is easily directed or could be blamed on that surface source. It is also noted in -- during inspections when this testing was done, that the lock or the hinges on the box where the water went in has been oiled.

And that oil and grease which appeared in some samples could have easily have come from there.

The alternative is that the oil and grease was carried through the aquifer out the ledges and back down in. That oil and grease would be expected to continue, if that was the case. Where it went in and came off from the hinges, it was because the flow at that point was reaching the hinges. And as it typically reached the hinges, it was during the normal flow period.

There's also -- It was stated that testing on Big Bear Spring was done for coliform, I think monthly, for organic-inorganic matters. It was stated that it was done once a year or up to every three years. So, we would need baseline data in order to establish any realistic increases in those values.

It was stated a few times of noncompliance and a history of noncompliance with Co-Op Mining Company. My experience with Co-Op Mining Company has been that they are willing to comply; that they have rapidly complied with all requirements that have been given to them. As far as water monitoring data, it was stated that was done improperly or it hasn't been done routinely. There is a recent history that I'm aware of that it has been done routinely. Monitoring of Birch Spring has typically been dry. That is on record. It was measured quarterly when

it was not dry; that samples were taken, and the parameters that were dictated by the mine plan were tested.

And as Mr. Owen stated, overflow from Big Bear -- I mean from Big Bear Spring is also routinely monitored. A base line was taken and is now monitored quarterly.

One other statement that I -- At this point I would like to draw to the attention of the Hearing Board that in November 12, 1990, Ardeth Wilson, secretary of Huntington-Cleveland Irrigation Company, withdrew his formal protest.

I feel like all these problems can be resolved; that the -- and I understand the Co-Op is willing to deal with these entities to resolve them. I again state that we would like to review, on a point by point basis, some of the points that are made in the report and in the requests that have been made.

That's all I have to say.

MR. STODDARD: My name is Bill Stoddard, and I'm president of the Co-Op Mining Company. And my concern would be at this time to let everybody know of the Division and everybody here that we do want to cooperate, and that our concern is the same as your concern. We don't want to pollute the water or tap into it in any way so that it isn't made available. So I just want to make mention that that would be my concern and our concern:

to be able to cooperate and let you know that our concerns are the same.

One other item that I would like to make mention: that it was made mentioned that we -- One of the things that Mr. Johansen brought up was any extension in our mining area should be denied because we might run into that water. It's also been made mention that there are mines north of us, so I don't feel that that impact would be -- because of that, that our impact would be that much on mining farther north.

And, thirdly, on behalf of the Co-Op Mine, I would like to ask maybe the Division permission that we might be able to meet with each of these concerns -- meet with them and talk with them and see if we can't work these things out and come to an agreement so that we can work with you and they can work with us and come up with an agreement. I would like to ask that we might be given permission for that time period. That's all I have to say.

MS. NIELSON: Mr. Kingston, did you want to make a comment?

MR. KINGSTON: If I might.

MS. NIELSON: Could you identify yourself for the record?

MR. KINGSTON: Carl Kingston, attorney for

Co-Op Mining Company. Each one of these items that were raised, I think we could spend probably a half an hour or forty-five minutes on rebutting. I think the suggestion of Kimberly Mangum is proper; that we be allowed to address each one of these in writing, since tonight is the first time we were apprised of some of these things.

But I think it should be evidence from the people that have spoken that it is the concern of Co-Op Mining Company to work with these people. We are concerned about the water rights that exist in the area. In fact, I represent some of the stockholders in Huntington-Cleveland Irrigation District, so I'm personally concerned, and I can represent that each one of the management personnel at Co-Op Mining Company are also concerned. I think you do have sufficient information that you can review and probably evaluate some of the concerns, particularly with regard to the alleged decrease in the water flow of the springs that are supposedly directly affected by Co-Op Mining activity. But if you correlate those and compare those with springs that are not in this same graben and aquifer, you'll find that they go along the same exact parallel line, based upon the precipitation within that particular time period.

Also, I do want to emphasize that the concern about mining north is really not that legitimate concern,

because there is a mine existing to the north. And Co-Op Mining Company has been mining in Bear Canyon for ten years now, and they've been mining in Trail Canyon since before 1940. And I don't believe there is any documented evidence that exists that can show that during that time period there's been any adverse effect on anybody's water rights.

Now, certainly that potential exists; and whether that potential is great, as the objectors have proposed tonight, or whether that's minimal, as Co-Op Mining's position will be, that potential does exist, and it ought to be dealt with, and Co-Op Mining Company is willing to deal with that.

It seems that the answer would be a monitoring program. I believe the Co-Op Mining Company had monitored, pursuant to the requirements of the plan. If there's additional monitoring that needs to be done, I think Co-Op Mining Company is willing to do that.

One of the problems, I think, has been that the area the objectors propose we do monitor, we can't get to because of the locked gates. And I suppose that would be an easy enough problem to resolve; simply by allowing us access at different times. But another suggestion was made that we perhaps could work one-on-one with these people and arrive at some agreement. And that also is

something I wouldn't want the Board to foreclose us from doing.

But simply to restate our position, we do want to have the time to address both the information that we received for the first time tonight, plus any additional comments that might be submitted in writing by the opponents. And we are concerned. We want to work with the Division. We want to work with the objectors. We want to continue to mine. We don't want to effect anybody's water rights. We want to conduct an operation that's sincerely concerned and addresses the objections that have been raised. Thank you.

MS. NIELSON: I would like to provide now for an opportunity first to Castle Valley Special Service District, North Emery Water Users' Association, the attorney for Huntington City, and the attorney for Castle Valley. If you have any questions with regard to the information that's been presented by Co-Op that you want to address at this point --

MR. JOHANSEN: I don't.

MR. APPEL: I don't have any questions either. Thank you.

MR. LEAMASTER: I don't have a question, but there's one point of clarification that I should make on those graphs.

MS. NIELSON: Why don't you do that now, Mr. Leamaster. And we're referring to graph Exhibits A and B. And I believe this is Exhibit A (indicating).

MR. LEAMASTER: The point I just wanted to clarify, we talked about these peaks that occurred. They indicated they were in 1988. They were actually in -- Excuse me. They said they were in 1989, which coincides with the time they got the peaks of Birch Spring. The peaks actually occurred in 1988. That's this peak and this peak (indicating). Now, it may be relevant. We have thought it was. In August of 1988 there was an earthquake that occurred just slightly south and east of us here. It was about a 5.2 or 3; something of that magnitude. We felt that had an effect on those two springs and increased the flow. The increase in flow that they saw at Birch Spring was in late 1989 and early '90, so it was separated by at least a year with these peaks.

MS. NIELSON: And was not related to --

MR. LEAMASTER: None that I know of.

MS. NIELSON: Okay. Thank you.

MR. LEAMASTER: He's indicated to me that there's a peak he was discussing --

MS. NIELSON: "He" being Mr. Mangum?

MR. LEAMASTER: Mr. Mangum. Was this peak on Little Bear Springs that occurred in -- looks like August

or September of '89. I'd suggest that is a pretty common thing that we've had all the way along. Because as you can see, we peaked in July and August in almost every year on that spring. So, I don't see this peak occurring anything different or unusual from what we've had on the whole history of the spring.

MS. NIELSON: For the record, then, does the Co-Op have any other question they wanted to address at this point?

(Participants indicating negatively.)

MS. NIELSON: There are a couple that I would like to ask for some clarification on. While I appreciate it's somewhat cumbersome, whoever chooses to respond to these could come to the mike so we can facilitate that comment.

First of all, I'm wondering how much -- and I think I'm addressing this question to you, Mr. Montgomery, but if other's want to comment, I'd appreciate that also. Is it possible, in your study, to be able to distinguish how much of the impact that you're defining is related to Co-Op's operation at Bear Canyon as opposed to other mining or exploration operations that are going on within and north of the graben you defined?

MR. MONTGOMERY: With the present information

that was made available to me, that would be very difficult to separate out and define; that this mine has caused this amount of decrease in flow. The problem, and one of the great needs, is to have a baseline or a monitoring well north of the mining operation so that we can see what's happening to the aquifer before the water gets to the mine, and then compare those water levels with changes that occur in the springs. It would have been ideal to have had this before any mining had taken place. Even though there were a couple of test wells drilled up there that I used information from the logs, I was unable to get access because it was high in the snow when I was there. But if those have been maintained, I don't know about it. But, really, there ought to be a monitoring -- at least one; more than one would be preferable -- north of the proposed mining or existing mining so we can see what's happening in that aquifer under normal conditions. And that's really what's needed to better define or answer your question. But with the present information, as I have it available, that would be difficult to answer.

MS. NIELSON: Okay. You've been underground -- I have one more question.

MR. MONTGOMERY: All right.

MS. NIELSON: You've been underground in the Bear Canyon Mine?

MR. MONTGOMERY: Yes, right.

MS. NIELSON: Can you identify the fractures that you indicated on your exhibits of the structure maps; can you identify those structures underground within the mine?

MR. MONTGOMERY: Yes, we can. They're very pronounced. And the faults that I show on the map, you can see them underground pretty well. And the coal bed is offset very conspicuously. There are many joints that parallel the faults that are hard to identify, because with no offset on them, and because they do spray the inside of the mine coated with lime dust, that it's hard to know where they are, because it's almost like you've painted over them. That's what's happened. But if water is working presently to those, and it's obvious there are places where water is coming down through-- The main flow I was able to see in the mine is up in the north end. And that is where the mining company has fenced off the area and put -- installed a pump. And they're pumping out of that water yielding area -- I understand from there maps that over a hundred gallons per minute was reported in that area. I don't know exactly the quantity of water they're pumping out of there for dust suppression; part of which water goes outside of the mine on supply uses outside of the mine. There is a pipeline that was pointed

out to us coming from the mine, so some of the water is used out of the mine. But the main flow -- appreciable flow is coming in the north end from the present mining operations.

And as was pointed out by Wendell, there are other flows in several other areas, but they are very small. And I think one of the problems in a mining operation, some joints, or even faults that's -- before the mining operations were open and allowed the free movement of water through them -- Once you instigate mining operations, you got coal dust; you got other kinds of dust, debris that tends to plug those in the floor of the mine. And not that they can't be freed at times, maybe under higher head of water or some other means, but not all of the water you see in the mine would necessarily have to have been recharged to the springs. Some of it may never have reached the springs. It may have spilled out as natural seeps, as Wendell pointed out.

The concern is that it appears that more is coming out to the surface than was heretofore. And that amount of water, part of it would have gotten into the recharge of the springs below. It's hard to define exactly how much of it got down. The joints in the sandstone tend to be sealed off at the shale beds. But along the faults, water tends to move on through the shale beds and go on

down. So, all of the joints do not transmit the water downward. The shale beds tend to deflect the water, and it comes to the surface, as was shown. But it's a hard thing to quantify, and especially once the mine has been coated inside to see exactly all the openings. But those faults are very obvious. The joints are hard to tell all of them, unless water is coming through them.

MS. NIELSON: When you were in the mine and you noticed the hundred gallons per minute close in the north end --

MR. MONTGOMERY: Yes.

MS. NIELSON: (Continuing)-- do you recall when that was?

MR. MONTGOMERY: Yes. That was in the first part of January that we were in the mine.

MS. NIELSON: Of '91?

MR. MONTGOMERY: Yes, '91. And that's the flow that they're presently using. It would be well, I think, for Wendell or one of the people from the mine to say exactly how much water they're pumping from that source area. It would be helpful.

MS. NIELSON: Mr. Owen?

MR. OWEN: We don't know exactly how much we're pumping from there. We pump from there, as he brought out, to other places to where we're mining. It takes a

certain amount of water. You have to spray the coal as you mine it; you have to have water on the belts; you have to have dust control; you have to have dust control on the surface. The only meter we have is on a line that leaves the mine to the surface. We have a culinary tank. And, of course, because of the variation in the use of bathhouse water and so on, it, at times, overflows. We have an overflow that is in our mine plan, and that is -- as has been documented by Oil, Gas and Mining.

Now, as far as the hundred gallon a minute, when that water survey was made, I asked the people doing that how they came up to a hundred gallon per minute. The reason I was concerned is that water -- I don't know how many of you -- probably a lot of you around here in this country are familiar with mines -- and that comes from maybe a thousand drips in the ceiling. And I don't know how in the world you'd ever tell that there was a hundred gallon a minute there. And I pose that question. And that was that they said, "Well, we come to as close an estimate as we could," because there's no way to get enough buckets under each one of those drips to time how long it will take to fill five gallon a minute. But I wanted to bring out that the hundred gallon a minute figure is not really a set, hard and guide figure.

MS. NIELSON: Mr. Owen, if I could ask a

question?

MR. OWEN: Yes.

MS. NIELSON: And if you wanted to put it to someone else, it's my understanding that right now Co-Op is pumping water from sumps in the mine for culinary use outside the mine; is that correct?

MR. OWEN: Yes, that's correct.

MS. NIELSON: Do you meter that use?

MR. OWEN: We meter what has left, yes. There is a meter where it leaves the mine and goes to the surface.

MS. NIELSON: Have there been variations in the amount of water that has been withdrawn from the mine for culinary purposes over the period of time that we're discussing?

MR. OWEN: Only, oh, short-term. Like I say, depending on being-- When we have holiday weeks, we don't have the bathhouse in use. Just short-term variations. Some seasons we have to use dust control more than we do others. Dry seasons we use dust control.

MS. NIELSON: But the dust control would be within the mine, again?

MR. OWEN: Dust control on the surface as well.

MS. NIELSON: Okay. So the water is used for culinary purposes after dust control within the mine?

MR. OWEN: That's correct. And like I say, there wouldn't be a lot of variation. It would be minor variations.

MS. NIELSON: How do you define "minor?" What sort of order of magnitude are we talking about? Is that less than 10% of the totals of constant variation; less than 10%, or --

MR. OWEN: I would imagine probably less than 10%, uh-huh. Like I say, as far as especially if you take it over a period of a month. In other words, on a dry day we're using more water for dust control. You get a wet spell, and you're not.

MS. NIELSON: Is there any other discharge from the mine?

MR. OWEN: Like I say, it -- the culinary has, at times, overflowed, so that there has been more discharge at times than what has actually been used. We do have an overflow on the culinary tank. And there is times that it overflows.

MS. NIELSON: But that would have been metered coming out of the mine before it went into the culinary tank?

MR. OWEN: Yes.

MS. NIELSON: Okay. Thank you.

MR. OWEN: Is that all?

MS. NIELSON: (Indicating affirmatively.)

MR. MANGUM: Can I make a comment?

MS. NIELSON: Certainly, Mr. Mangum.

MR. MANGUM: Yes. Just a comment about putting a drill hole north of the mine. It has been commented previously about drill holes, because this is not an exact aquifer; that the water may flow six feet away from where you put the hole and not where you put the hole, and also could disrupt that particular crack that the water was flowing in. So, there is some concern, even, about putting in a drill hole in its accuracy or in its possible disruption of the existing aquifer or crack.

MS. NIELSON: I have a question that I think perhaps, Mr. Leamaster, you can address or tell me who might be able to address it.

I understand that there are concerns about monitoring and the request for monitoring by Co-Op. It's my understanding that there is an existing monitoring program, but that there is not access to boxes that are locked. Has there been, in the past, some arrangement for Co-Op to be able to gain access to those to monitor, or is it possible to work out an arrangement where there could be monitoring of those locked points?

MR. LEAMASTER: Yes. All of our collection boxes and our spring outlets are locked, obviously to

keep any vandals or anyone else out of the springs. I don't think we have any major objections to making those available to them for monitoring. To my knowledge, they've never requested that from us. And I think that some arrangement could be worked out. I think Mr. Owen indicated that on our Big Bear Spring they've been sampling from some of the -- it's not really an overflow. It's a small trickle that escapes our collection system and runs by us. And apparently, that's what they've been sampling there.

One of our problems there is we don't feel like we've ever had access to the information that they have collected -- you know, whatever they collected. And we would really like to have some kind of access to that; to know what's going on and how it's collected and when it's collected and what the results were.

MS. NIELSON: Thank you. Does the Division have other questions?

MR. MUNSON: Mr. Montgomery, when you were in the mine, I believe we saw, as well as when I was in the mine -- and where the water occurred in the north part of the mine -- I was just curious if you could ascertain that that was fault-related versus potentially a channel sand, which I don't know if you're familiar with that occurrence, but that is a very common occurrence in these

mining operations where there's been an actual -- a channel has been laid out you know, past connate water-type scenario? Would you address that?

MR. MONTGOMERY: Certainly. We did not get beyond the fence. The area is fenced off. And so I could not look right up close to it, and the water was deeper there. So we didn't get right up and look at it closely. From the mapping that I've done, which I might state verbally, but it's in the report, I utilized two sets of aerial photography besides what field work I did. And there is a fault north of there that you can trace southward; but then it terminates, as far as what you can see on the surface from aerial photography. And I could not correlate that spring or the discharge point that they're getting their water out of with any particular fault. I can't, from the information I have on hand. It could easily be coming, as you say, through a channel in the sandstone. But it's dynamic water. It's moving. It isn't stagnant, and they are using from it. So, it's refreshing itself. So, it's being recharged, and I suspect it's being recharged by either faults or prominent joints. That's the likely recharge to it. But it certainly could be discharging out of a channel sandstone that's being fed from fractures.

So as far as looking closer than about, oh, probably

sixty or seventy feet, something like that, that's the closest gaze I got at it.

MR. MUNSON: Thank you.

MR. MITCHELL: This isn't so much a question, as much as a clarification of where we are right now, without taking anything away from the chairman. This is new information, to a large extent. The Co-Op and the Division would like the opportunity to review, particularly the geologist's report. To that end, I think you can all understand that this will need to be supplemented, and probably will be supplemented in writing, although I think we'd be interested in hearing from any of the parties whether they think they want an opportunity after they've examined it to then ask for their follow-up questions verbally, particularly the expert witnesses.

MR. COPINGA: (Indicating)

MS. NIELSON: Mr. Copinga?

MR. COPINGA: I'm stating the fact that -- talking about access to our springs. We've never been contacted to get to our springs. And as we know right now, they've only tested our springs twice over the years.

MS. NIELSON: Okay. There's been a few issues raised, as Mr. Mitchell just indicated, that I would like

to provide some direction on. First of all, relative to supplementing the record, I would propose and hope that if there's a concern with this time frame that you've indicated at this point, that the Division provide ten days until close of business on the 15th of February to allow the parties who have presented information this evening to supplement the record and would ask that they also provide copies of that information to the other parties. And I'll discuss those with you in just a moment. But if there is any new information that is provided in those supplements to the record, that the parties will be allowed ten additional days to respond to that new information in writing. And at any time during this period, if one or more parties desires to hold a hearing again to discuss information with witnesses or other parties, we would consider that.

The purposes of being able to supply comments and, thus, expediting this supplemental response period, for Castle Valley--Mr. Leamaster, would you serve as contact?

MR. LEAMASTER: Yes.

MS. NIELSON: North Emery Water Users', Mr. Menco Copinga?

MR. APPEL: Actually, I will do it.

MS. NIELSON: You will. Okay. Mrs. Wilson, does Huntington-Cleveland wish to be in receipt of

additional comments with an opportunity to respond?

MRS. WILSON: I think so.

MS. NIELSON: Okay. Do you want to be contact on that?

MRS. WILSON: No. Make it to Ardeth Wilson.

MS. NIELSON: Okay. For Co-Op Mining, Wendell Owen?

MR. OWEN: Maybe to the engineer or to --

MS. NIELSON: To Mr. Kingston?

MR. KINGSTON: Yes.

MS. NIELSON: And Huntington City, Mr. Johansen?

MR. JOHANSEN: That would be fine.

MS. NIELSON: So I would ask the parties, if you don't have addresses or contact of those individuals, would you please ensure that you get them, and the Division would be happy to provide them. Again, the point being that as you provide that information to the Division by the 15th of February, that it would also be provided to the other parties by that date. And if any of the parties, being that there is new information -- and I stress new information that they feel they need to comment on -- that they will notify the Division and will be allowed ten additional days to respond to that.

There was a request raised by Co-Op that there be an

opportunity or that we not foreclose the opportunity for the parties to meet and to work out the problems or the issues of concern here. And I would like to stress that that's an opportunity at any point. We're certainly not in the process of trying to reach some solution in our action, meaning to foreclose any opportunities for the parties to do that independently. If that's appropriate, I would encourage you to do that. The Division would be happy to assist in any way we can in terms of helping that sort of meeting to go forward. And to the extent that there is a feeling by the parties that that sort of meeting is fruitful and likely to carry into some sort of agreement that will resolve any of these difficulties, I would encourage you to let the Division know so that we could consider that as we move forward on our action.

This is an informal hearing, and so those contacts are certainly appropriate, especially if they can help to resolve any of the problems. If it is appropriate and the parties don't object, the Division would like very much to be a party to those discussions. But we would leave that to your discretion, at least to the extent that you would provide us with that information as well.

MR. MITCHELL: Let me just address this to counsel; two things. In the first instance, when you make your submissions and you provide copies to other

partes, would you please -- it will be second nature, I think to the lawyers, but those of you that do things that aren't lawyers, would you just put something on the back and sign to the effect when you mailed it or when you caused it to get into the hands of somebody else and how you went about doing that so we have some way of determining that?

With regard to the lawyers, I think it would be very helpful, when you make your written submissions, when you finish supplementing your record, I'm sure you have your own opinions on both sides as to who has what burden of proof at what point. Mr. Appel made reference to that when he spoke. I assure you that we would appreciate having your feedback about that up front. And so any sort of legal memorandum you would like to file would be encouraged; and that if you can make reference to what evidence you believe is presently in the record, which you believe either meets your burden or where you believe the burden has not been met, and some sort of analysis of that from your party.

MS. NIELSON: Okay. And the clarification, am I correct in understanding that Co-Op has a copy of the January 20th report from Mr. Montgomery?

MR. LEAMASTER: I provided them one tonight.

MS. NIELSON: You did. Okay. And that was

Exhibit 19. And you are in receipt of that?

MR. OWEN: Yes.

MS. NIELSON: Are there any issues which I've failed to address that we need to provide for the clarification?

MR. GRANT WILSON: (Indicating)

MS. NIELSON: Yes, sir. Would you step forward and identify yourself, please?

MR. GRANT WILSON: I am Grant Wilson, representing Huntington City, but not as a spokesman. Mr. Owen had reference to a couple of points that I would like to make sure is on the record. Number one, he mentioned that there were, in effect, a bond or -- or shares to cover any loss or damage to the spring. I was party to that agreement, Mr. Owen, at the time, if you remember me. I was on the City Council at that time. And one of the reasons for Huntington City having to go to the Little Bear Canyon Spring, which he mentioned on the -- upper canyon spring, was the loss of water from the Bear Canyon Spring at that time when they were mining from Trail Canyon over into the Bear Canyon area before the opening of their Bear Canyon Mining program. And, number three, is that the cause for the large coliform count at that time, which I was monitoring weekly, and the ice -- three ice programs that you showed there are parts of the

boxed-in springs that we had to delete from our water system at that time when we applied for the loan to get the water on down the line. So, just for the record. Thank you.

MS. NIELSON: Mr. Wilson, could you clarify the last statement concerning the sampling of coliform bacteria? What you're saying is --

MR. GRANT WILSON: Excuse me for interrupting you, ma'am.

MS. NIELSON: Surely.

MR. GRANT WILSON: I'm saying that I was the Huntington City Councilman over the water before the Special Service District came into being.

MS. NIELSON: Okay.

MR. GRANT WILSON: And it was my responsibility to collect the water samples that was sent into the State for approval or rejection. And it was because of those contaminations of those three springs that was left -- or surface areas of water that was left as surface water and had to be deleted from the collection box system, that we were able to have icicles hanging down the walls on that side. And also, for information, the break-through from Hiawatha -- when they broke through in the 1950's and early 60's, is when the icicles started to show up on the east side of the canyon. And Mr. Wilson, from both the

canal company and the North Emery Water -- remembers that break-through. He was with them.

MR. MITCHELL: Just for clarification, the period of time in which you were making those collections was prior to the Special Service District?

MR. GRANT WILSON: 1976 to 1978.

MR. MITCHELL: Okay. And the springs which you say have the coliform problem were springs which appeared on the surface but which were subsequently spread across the surface, rather than being collected at the Bear Spring box?

MR. GRANT WILSON: They were a group of springs. And that's what we have at the Bear Canyon collection system. They're a group of springs that comes out. And they're all cemented in and put into a pipe that goes out into one large box and is funneled into the main line pipe going downstream.

MR. MITCHELL: And the three that do not go into that box come across the surface?

MR. GRANT WILSON: Yes.

MR. MITCHELL: And the reason they don't is because of coliform problems?

MR. GRANT WILSON: Right.

MR. MITCHELL: And then your last point had to do with the activity of the 1950's in the Hiawatha Mine?

MR. GRANT WILSON: This Hiawatha Mine, when they broke through back in that area.

MR. MITCHELL: And the icicles you're referring to --

MR. GRANT WILSON: And it caused a tremendous drop in the Big Bear Spring -- what we call the Big Bear Spring. And we had to go on up-canyon at that time and put in the Little Bear Spring for additional water supplies for Huntington City.

MR. MITCHELL: Okay. And the icicles you're referring to on the east side of the canyon, you're referring to the east side of Bear Creek Canyon?

MR. GRANT WILSON: That Mr. Owen referred to saying that he had walked Bear Canyon and seen icicles all up the canyon and didn't see where they had any reference. I think they had a lot of reference.

MR. MITCHELL: And you're saying those first appeared back in the 1950's?

MR. GRANT WILSON: Yes. 50's and -- I've not walked up there since the 60's. I lost my leg in Korea at that time.

MR. MITCHELL: Thank you. That helps.

MS. NIELSON: Are there any other comments or questions of anyone in the audience that would like to address at this time? Are there any other issues to come

before this informal hearing? Being none, we stand adjourned. Thank you very much.

(Whereupon, this concludes the reporting of this hearing.)

CERTIFICATE

STATE OF UTAH)
)ss.
COUNTY OF CARBON)

I, John F. Greenig, do hereby certify that I am a Registered Professional Reporter and Notary Public in and for the State of Utah;

That as such reporter, I attended the hearing of the foregoing matter and thereat reported in Stenotype all of the testimony and proceedings had and caused said notes to be transcribed into typewriting; and the foregoing pages numbered 2 to 98 constitute a full, true and correct report of the same.

DATED at Price, Utah this 9th day of April, 1991.

John F. Greenig

John F. Greenig, RPR

My Commission Expires:
Jan 18, 1993